DOCUMENT RESUME

ED 099 463 CE 002 472

TITLE	The Blue Hills Model; A Collaborative Experiment in Career Development. Volume 1--The Satellite Plan.
INSTITUTION	Blue Hills Regional Career Education Center, Canton, Mass.
PUB DATE	[73]
NOTE	30p.; For related document see CE 002 473
EDRS PRICE	MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS	*Career Education; *Demonstration Projects; Educational Programs; Integrated Curriculum; Models; *Occupational Guidance; Organizational Development; Program Development; *Regional Programs; Secondary Education; Vocational Development; Vocational Education; *Vocational Training Centers
IDENTIFIERS	Massachusetts

ABSTRACT

The document traces the development of one specific model, the Blue Hills Regional Technical Education Center, a regional school serving the specific occupational and career educational needs of high schools in seven suburban communities, located in Canton, Massachusetts. It also outlines the organizational structure, the program philosophy, and the exploratory cluster concept, which provides for students not yet ready to make a commitment to either vocational education or college preparation. Occupational guidance devices, program content, the current status of the program, projected plans, and conclusions are offered. Summarizing the benefits to member communities, the document concludes that the model has provided a practical framework for real cooperation between academic and vocational-technical educators, and may provide the basis for a new funding design for occupational education in Massachusetts. (MW)

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THE BLUE HILLS MODEL

A COLLABORATIVE EXPERIMENT IN CAREER DEVELOPMENT

Volume I - The Satellite Plan

CE002497

ED 099463

THE BLUE HILLS MODEL

A Regional Center Providing:

Comprehensive Programs in Vocational - Technical Education

Curricula and Resources for a Career Educational Network

Exploratory Options in Career Clusters

Volume I - The Satellite Plan

THE BLUE HILLS REGIONAL VOCATIONAL SCHOOL DISTRICT COMMITTEE

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Superintendent-Director

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THE CASE FOR THE EXPANDED REGIONAL VOCATIONAL SCHOOL DISTRICT

As Massachusetts continues to expand its current potential for offering comprehensive occupational education, career development and occupational competency for an additional 40% to 60% of its secondary student population, educators, facility planners and school board members continue to deliberate on alternative delivery systems which will provide more effectively and efficiently the process, as well as the core facility, for a greater share of our young people seeking career education in the Commonwealth. This document will serve to outline one specific model, namely, the Blue Hills Regional Technical Education Center, a regional school serving the specific occupational and career educational needs of seven suburban communities, located in Canton, Massachusetts, sixteen miles south of the City of Boston.

The Satellite Plan, and the following related series, will carefully and deliberately attempt to alleviate the current misconception that regionalized occupational education is costly. When one measures the success of the regional model, and the cost effectiveness of the collaborative efforts it provides, the educational advantages and benefits to the member communities of the district become readily apparent.

The Blue Hills Regional Center model should dispel thoroughly recent regional study committee and commission statements to the effect that Massachusetts cannot afford additional comprehensive occupational education of the regional variety, and that Massachusetts must examine alternative secondary skill training centers as a more economic solution, a concept that calls for the student to be bussed to an occupational educational center for his "skill" training, and then back to his or her academic high school for core subject matter.

The author considers such an alternative, although acceptable in specific geographical and political environments, to be no more than that, and in most cases "a last chance" or, least desirable option. To separate the occupational or career major from the general educational core by geographic boundaries, with the only link to suggest program correlation, THE BUS, is to extend only further the dichotomy which has for too long delayed educators from providing for the whole child.

The Blue Hills Model Satellite Plan as outlined in this volume, will provide for 25% or 2500 of the District population with on-campus options in approximately forty specific occupational programs at the regional center. In addition, the center will provide and train a career team teaching unit which will travel to the satellite career development program in each member town high school within the region providing career exploration programs for approximately 2000 students by 1[illegible] and 3500 students by 1978.

A comprehensive plan for Occupational Education and/or Career Development Exploration for 55% of a school district's population is a worthwhile goal for every Massachusetts city, town or school district.

The Blue Hills Model will realize this goal and, by the dissemination of this document and the related curriculum series, the Regional School District Committee intends to outline one effective model for review. Should any of this information provided herein for Massachusetts educators and planning committees prove to be of some value to the reader then the efforts of the Blue Hills Center, to share our experience through this publication, will be considered worthwhile and to have been of service to the Commonwealth and its youth.

William A. Dwyer,
Superintendent-Director

The Blue Hills Career Education Model and Its Role in Augmenting Benefits for the Regional School District

The model presented in this document - combining specific occupational education with career development (extending downward to the elementary grades) has not been "jerry-built" in haste or through any need for expediency. It has evolved through a long-term process which - although not yet completed - represents a great deal of experience, insight and thought which should be of use to others.

Contrary to what the seemingly recent emergence of "career education" might suggest, the issues involved are those which have concerned and occupied vocational educators for decades - such as: the relationship between academic and vocational education; the "comprehensive" school versus the separate or self-contained vocational-technical school; the proper role of Industry in occupational education; the conflict between the reality of individual differences and that of program manageability; whether, and to what extent, the crafts-oriented vocational educator should be responsible for lower-level, short-unit occupational programs; and, many other difficult questions.

The model, therefore, is a composite or moderate compromise of known conditions in the industrial sector, plus conclusions that the vocational educator has developed concerning his area of competence within the educational sector. The term, "moderate" is used since the model attempts to view its components in a realistic way and to avoid excesses of any kind. The term, "compromise" is used since the model attempts to maintain a "systems" point of view regarding how its components must interact with each other.

For example, a recent analysis of regional vocational-technical schools in Massachusetts concludes that one geographic region (containing a slightly greater secondary school population than the Blue Hills district) would need eight regional vocational schools to serve that population - or, rather, an estimated 40% of it. A brief analysis of this statement will provide a useful introduction to the Blue Hills career education model.

First, the study in question disregarded the Blue Hills-proven function of a regional vocational-technical school in serving as a core resource-center for career development programs in academic high schools within its district; a function which, in fact, extends the benefits of the core-center to all of the secondary institutions in the region. It is no longer realistic to assess the

advantages and services of a regional vocational-technical school by looking exclusively at the center proper and its programs; just as it has never been realistic to assess such center's worth by looking exclusively at the secondary level. The study in question made both of these errors: one of "omission" and one of "commission". The Blue Hills model avoids both of these errors.

Second, the study did not sufficiently pursue two widely recognized facts, which greatly influence projections on how many students can be expected to require occupational education at the secondary level and on the kinds of programs needed to serve them (hence, a practical estimate of the probable real demand on the highly specific services of a regional vocational-technical center):

- Industrial manpower needs fall on a very broad continuum which ranges from basic skill levels (and occupations for which instruction need be but brief) to greatly advanced skill levels (and the more technical occupations for which instruction will be lengthy and expensive); there are supply gaps in many parts of this continuum, particularly in the service occupations (many of which are at the middle-to-lower skill levels) and in the technical fields (many of which require advanced post secondary courses)

- Student needs also fall on a very broad continuum, which not only must roughly approximate the scope of the industrial needs continuum, but which involves an important time factor: students who have the capabilities of becoming skilled craftsmen or technicians will not all desire to undertake such instruction at the same time in their educational careers (e.g. between the ages of 14 and 18); many will only be ready to "sample", at this age, thus postponing their detailed preparation until adulthood is reached

Consequently, the aforementioned study - in making its "eight-school" statement - throws the entire weight of this sudden and massive increase in occupational programs on to the regional vocational-technical school, which must specialize in the more complex and lengthy kinds of instruction if it is to operate efficiently. In this application, the 40% service stipulation is considerably too high. However, if this 40% level was meant to apply to all types of occupational education at the secondary level - including orientation, advanced Industrial Arts, occupational guidance, and short-unit instruction, the figure is considerably too low.

Another important error that the study commits is its strong implication that approaches such as the "comprehensive" high school and Industry-based

cooperative education should be thought of as alternatives to the regional vocational-technical school. If accepted, such a definition effectively precludes the "systems" approach which would define these approaches as being complementary to each other; in fact, mutually reinforcing. The Blue Hills career education model attempts to employ this systems approach.

However, since some planners prefer to view the various approaches as actual alternatives, the following facts - based on national experience - should be considered:

- Only the largest municipalities, or those with unusually productive tax bases, can afford to offer the more sophisticated vocational-technical programs, on their own and in sufficient diversity; national sources indicate that such a program must enroll no less than 400-500 students, in order to operate efficiently

- National sources indicate that, unless a comprehensive high school is very large - at least 3000 students - the vocational program is not likely to offer the variety of opportunities found in a separate vocational school

- Regarding cooperative programs, with skill training based in industrial locales - only the more highly developed and diversified industrial areas could possibly offer the wide range of training sites which would be required to put a total vocational-technical curriculum on a purely cooperative basis

- Few industries are now (or ever) in the position to undertake the major responsibility for, and the costs of, sophisticated training, unless it is narrowly confined to the specific needs of the industry involved - and then, only for the time period during which such needs are felt; training often is so narrow as not to apply to other industries in the same field and broad certification of a worker's professional competence is often not justifiable, thus posing problems when he changes employers

- Cooperative programs are more appropriate for occupations which require but a short time for complete training; in addition, such training must be closely coordinated by vocational program personnel - otherwise, training objectives can be forgotten and other kinds of abuses can occur

As mentioned earlier, there are many such considerations - or conclusions reached by vocational educators, through experience - which deserve to be carefully presented to, and understood by, non-vocational educators who are now entering the new area of "career education". However, the purpose of this document is to describe one model for career education - which has been

functioning successfully, in the Blue Hills district. This model nevertheless, meets certain prerequisites which its designers feel must apply to all such models for career education. They are offered, below, as a proposed guide for those who may not be able to use the Blue Hills model, exactly as presented.

Suggested Prerequisite Characteristics of a Career Education Network

- Career Education should be defined, for network purposes, as a goal of all educational programs, at all levels; below the baccalaureate level, it should include:

  Grades K - 6 = Career Awareness, the learning about the many possible avenues into the "World of Work"

  Grades 6 - 9 = Career Exploration, visual/intellectual/manipulative experimentation with selected samples or clusters of occupations, as a preliminary to career choice

  Grades 9 - 12 (or 9 - 14) = Career Development and Specific Occupational Preparation, the merging of the college and occupational focuses within a broad occupational cluster, culminating in skill training for a more specific occupation in the student's chosen career area

- The objectives of the career education network should be derived from a careful definition of the education/training needs which the network must meet; these objectives should be developed in advance of the network design and should be categorized according to an ascending order of broad skill levels

- A sufficient number of non-competitive network paths should be made available to answer the occupational education needs of all students, whenever they may need to use these options

- Institutional elements of the future network should collaborate - in fact, mesh programatically - so that students progressing through the numerous network paths do so smoothly and without unnecessary interruptions or loss of time, from K through 14

- All existing institutional resources should be maximally utilized in the future network, before new institutions are created and - should the latter be required - after such innovation

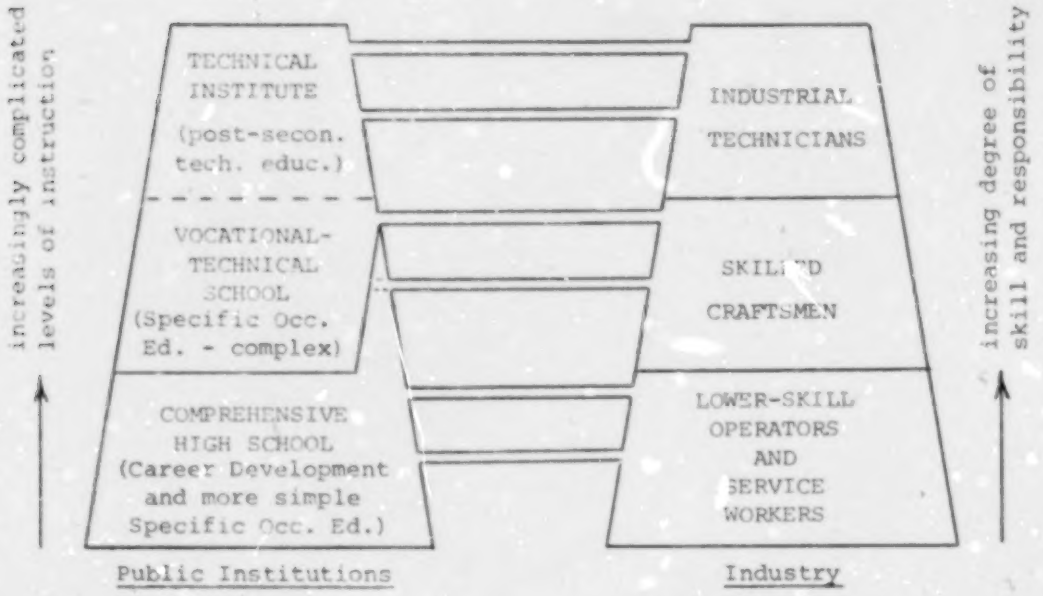
- Each part of the education/training need spectrum should be filled by the institution or mechanism which is most cost-effective and which is actually available to the network; for example, presently academic high schools, after becoming comprehensive, should concentrate on occupational orientation and exploration, should also

provide the vehicle for lower-level, short-unit specific occupational education, and should feed into the more specialized vocational-technical schools which, in turn, should concentrate on the more complex, time-consuming and expensive kinds of programs that they are best-suited to offer.

This logical assignment of roles, as related to Industry needs, is schematized in Diagram #1, below:

DIAGRAM #1

THE BRIDGES BETWEEN SELECTED JOBS AND PUBLIC EDUCATION



In order to gain appreciation of how Diagram #1 illustrates some of the previously listed prerequisites, the following points should be noted:

1. The narrow, ascending triangle at the upper right part of the comprehensive high school's "area" indicates that programs for some selected occupations which are more highly skilled - but do not duplicate the vocational-technical school's offerings and are not of long duration - must be performed as outgrowths of the comprehensive high school's lower-level occupational programs: these will largely be offered during the twelfth year and on a cooperative basis with prospective employers.

2. The two horizontal bridges, at each of the three levels, indicate that students who do not complete these programs will nevertheless have salable skills - which of course will qualify them for jobs at a lower level than if they had finished their programs

3. Both pyramids are truncated at the top: In Inustry, various kinds of engineers are positioned immediately above the technicians and, with additional degree-type instruction, technicians can move into these positions; similarly, engineering education of several types lies above the two-year post secondary Technical Institute, and one of the functions of such an institute is to provide instructional options for those graduates who wish to pursue such advanced work

4. The "bridges" between Industry and public occupational education programs are two-way streets: Just as the institutions send entry-level workers into Industry, so do they simultaneously accept experienced workers from Industry who require up-dating of their skills. This latter function would largely be restricted to the vocational-technical schools and technical institutes.

- Industry should be as closely consulted and utilized as possible, but cooperative programs must continue to be carefully designed and must not place too costly or permanent a burden on industrial partners

- All occupational elements of the network should be coordinated by a single administrator or administrative office

- The network design should remain "open-ended" and continuous evaluation should be performed, so that occupational offerings and relative numbers trained in each do not fall significantly out of balance with the region's or municipality's needs

- The network should be organized so as to achieve maximum equalization of educational opportunity within the municipality or region

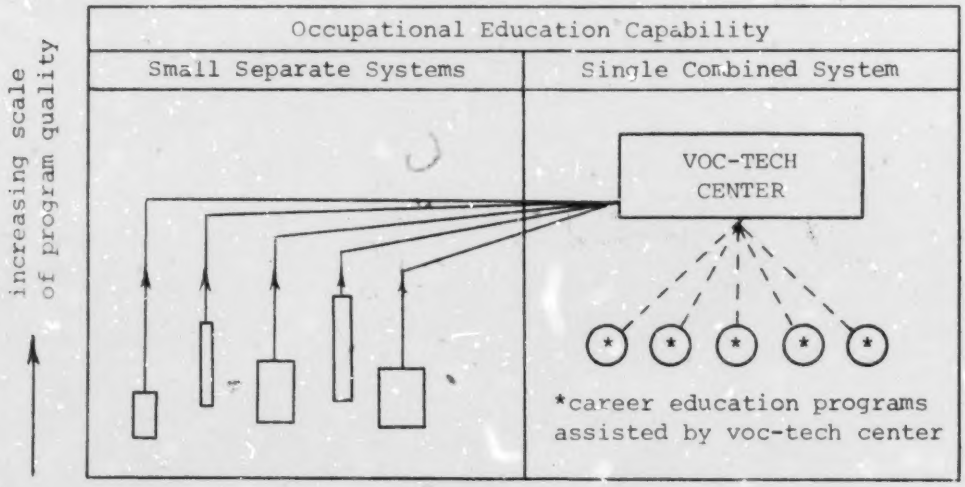
The final prerequisite stated immediately above - while always being of importance - has special significance, in light of several United States Supreme Court decisions which will be forthcoming during the coming year. It is now mandatory that occupational education designs (as all other educational designs) must not penalize students through the mere accident of where they live.

This re-emphasized mandate focuses on one of the advantages of a regional school or a large metropolitan school serving an entire urban area. Diagram #2 illustrates this advantage. It hypothesizes a group of five communities which have the choice of offering their own separate occupational programs, or, combining their resources to offer a single, joint program.

The vertical dimension represents program quality, while the horizontal dimension indicates how many occupational offerings are possible in a program.

DIAGRAM #2

THE REGIONAL OR LARGE URBAN VOCATIONAL-TECHNICAL SCHOOL
AS A MEANS FOR EQUALIZING EDUCATIONAL OPPORTUNITY



Note: Horizontal width of each rectangle indicates the diversity of occupational education program offerings which are possible in each system.

While the above schematic is largely self-explanatory, it should be noted that its title does not do it justice. In addition to providing equalized instruction for students from different communities (or different sections of a large city) - where they previously would have had access to programs of unequal quality (or none at all) - the centralized vocational-technical school also

- makes this equalized occupational education opportunity available, to all, at a much higher quality level than would have been possible in the individual localities - each acting separately
- provides a diversity of program offerings which also would not have been possible for the localities to support, individually
- contains greatly increased resources which it can offer to participating communities (or city high schools) in support of the latters' career education programs - thus tending to both raise and equalize these newly forming educational opportunities, as well

Consequently, the vocational-technical school (whether regional or large-city) responds positively to one of the major educational problems of today.

The Basic Premise of the Network Model

As was previously mentioned, sweeping statements that "forty percent" or "seventy-five percent" of all secondary students need "occupational education" are not of much assistance in planning an integrated program at that level. Depending on which level (secondary, post secondary, or other) the planner is dealing with, he will find a need for several different types of programs, as differentiated by terminal skills, alone. If he is thinking in terms of a network, he will also be considering two or more institutional types, which have differing capabilities. Finally, he will realize that - although most students need some form of specific occupational education while in secondary school - many may, at that stage, only be willing to sample the various clusters in a casual, tentative fashion. Others will have definitely decided on a college goal. More than a few may be thoroughly confused.

As an initial step toward rationalizing and quantifying their program planning, vocational-technical educators have decided on four categories of instruction which will span the entire secondary school level. These categories - as formally defined, below - are intended as planning aids at the systems level; they are not "tracks", nor are they to be interpreted as representing groups of specific students:

- Specific Occupational Education (SOE) - defined as instruction for a specific trade, technical occupation, or relatively well-defined and limited occupational cluster, as presently offered in Massachusetts vocational-technical schools

- Career Development (CL) - defined as instruction for those students who, while primarily oriented toward a vocational emphasis in their education, are either less certain of their commitment to a specific occupation or are interested in occupations requiring but short-unit preparation

- College Preparatory with Career Development Electives (CPCDE) - defined as instruction for those students about whom it is impossible to determine, during their high school careers, whether upon graduation they will be better suited and self-directed toward more specific occupational education or toward college; who should not be channeled prematurely into either direction; and, for whom all options must be kept open

- College Preparatory (CP) - defined as instruction for those students whose talents and decisions are as definite toward baccalaureate work and professional fields as are those in the SOE category who are pursuing (or should have the opportunity to pursue) specific occupational education

In order to use these definitions for actual program planning, vocational-technical educators next had to estimate the rough percentages of all secondary students who might be expected to gravitate into each program category, in future years. Three points must be made, concerning these estimates:

- Any such tentatively assigned percentages can be challenged, since no one can state with any final certainty what they ideally should be, or what they will be; but, they are legitimately as much a function of targets which the community (local, regional, state or national) decides must be set for and by itself, as they are of solely student-centered research on student capabilities, motivations, or choices; the justification for this is based on vocational-technical education's unique dual responsibility to Industry (i.e. to enhancing the community's economy by training skilled workers) and to the individual student

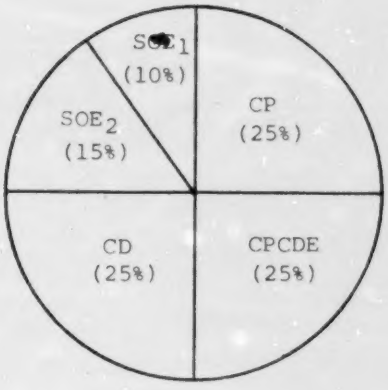
- The compartmentalization of program elements (SOE, CD, CPCDE and CP) does not rule out individualization of instruction within these elements

- As will be illustrated at the end of this section, the percentages also reflect what may be practical limits which even the most dedicated and financially sound communities will experience in supporting such a comprehensive network

The following schematic represents the Commonwealth's total public education program - at the secondary level, only. Within the circle, from the top center point, counterclockwise, are four quadrants of decreasing specific emphasis on occupational content - following the foregoing definitions:

DIAGRAM #3

PROJECTED ENROLLMENT PERCENTAGES
IN SECONDARY PROGRAMS



Legend

SOE = Specific Occupational Education (in regional or city centers)

SOE_1 are presently accommodated

SOE_2 will be accommodated by fully developed center system

CD = Career Development (in presently academic schools)

CPCDE = College Preparatory with Career Development Electives (located as in CD)

CP = College Preparatory (located as in CD)

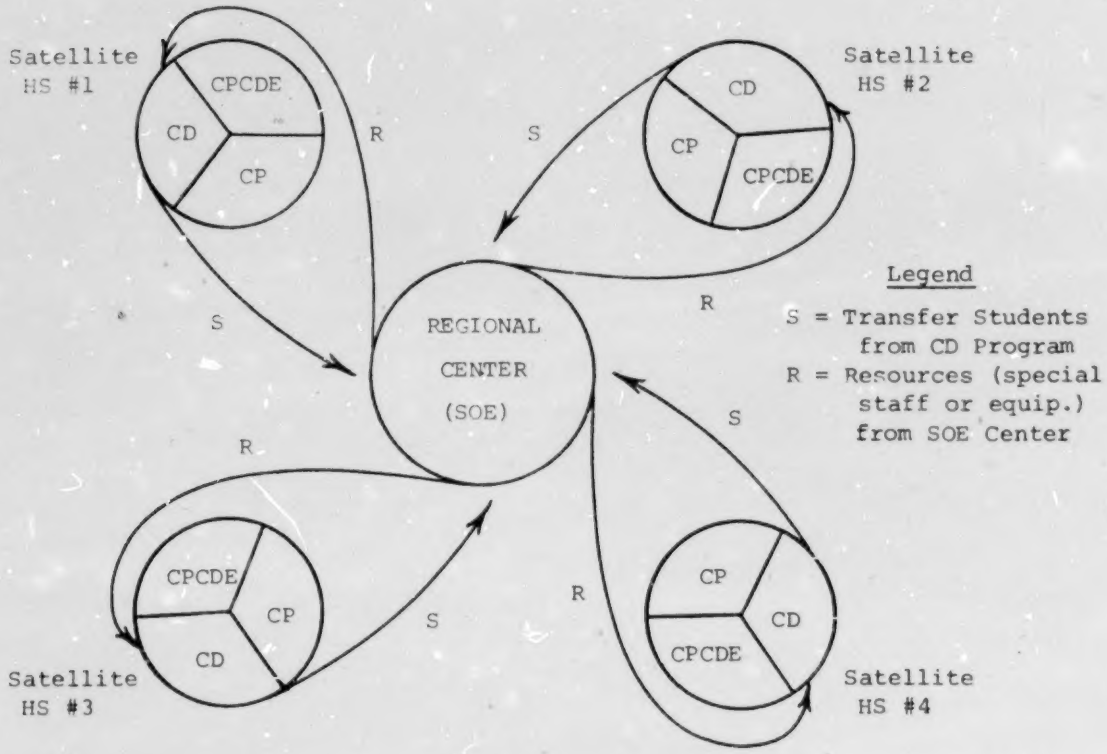
Description of the Network Model and Its Important Elements

This basic quantitative premise, and the various career network prerequisites previously outlined, have led to the development and experimental implementation of the MAVA-Blue Hills network model for specific occupational education and career development. The overall organizational elements of this model are schematized in Diagram #4, below.

The student's perception of the operating system can be seen from examination of any of the "satellite school" circles; while any single school's role may be determined from viewing the diagram in its entirety. It should be noted that the four satellite circles are used merely for graphic balance. Actually, there are now two cooperating high schools in the Blue Hills network (Randolph and Holbrook); a third school's participation is being negotiated (Braintree); and, ultimately, it is hoped to include all seven academic high schools in the Blue Hills regional vocational-technical school district.

DIAGRAM #4

OVERALL ORGANIZATION OF THE NETWORK MODEL



In explanation of the above diagram's important features, as they might apply to any vocational-technical institution in Massachusetts, it should be noted that

- The "satellite high schools" are satellites of the regional SOE center only for the purposes of strictly occupational segments of the formers' programs - including such segments of the career development (CD) program and any short-unit specific occupational education (SOE-cooperative); both of these are additions to the satellite high schools' regular offerings

- Specific occupational education - with the exception of those areas which require only short-unit instruction - is the function solely of the core regional center, which also serves the additional function of being the resource clearinghouse for the career development programs in satellite schools in its region; for example, the more expensive items of equipment and the more sophisticated instructional aids are disbursed from the core regional center, on loan to the satellite schools as the need occurs, for occupational segments of the latters' career development programs

- An important feature of the regional SOE center's resource allocation will be the hiring and training of special instructional personnel which will rotate among the satellite schools, so as to provide satellite-school staffs with additional content expertise on a regular basis

- Although the subject of this document is the MAVA-Blue Hills network model and its operational program, the "regional center (SOE)" in Diagram #4 could likewise represent a large urban vocational-technical school or a very large comprehensive high school with an independently administered vocational-technical center housed in its facilities

In elaboration of the last point, above, it should be understood that the MAVA-Blue Hills network model presumes a collaboration among separate and fully equal partners. In many respects, it is very similar to a contractual agreement; in this case (and regarding career development students in the satellite high schools), the partners agree that the administrators and staffs of such schools will defer to the expertise of the regional SOE center administrator and staff - but only in occupational education matters.

Clearly, the model would not apply to the fully comprehensive high school, since the carefully assigned roles and functions would only continue at the pleasure of that school's administrator. In Massachusetts, this supervisory power has been reserved to the community's School Committee or Board of Trustees for Vocational Education - or (in the case of regional schools) to the Regional

District School Committee. For similar reasons (and others which are even more cogent), the model would probably lose much of its programatic focus and administrative efficiency, if the regional SOE center were established as a cafeteria-type "skill center" (i.e. shops, only) under the joint direction of a number of independent superintendents.

Student options - Regarding the satellite-school student's options (see interior of any of the four satellite-school circles, in Diagram #4)

- He or she can move - with appropriate guidance - from the CP or College Preparatory sector to the next more occupationally oriented sector (CPCDE or College Preparatory with Career Development Electives) simply by choosing one or two offerings from the career development program

- In order to move into the CD or Career Development program itself, he or she will be required to demonstrate basic competencies and to exhibit a real commitment to some general occupational field

At this point, it should be noted that "academic" subjects in the CD program may have a somewhat different context from those in the CP or CPCDE programs. However, special added instruction will be made available to CD students, if they wish, so that more than one set of requirements can be met. In this way, no CD student will be irreversibly locked into one direction, either within his school's circle or subsequent to his graduation.

- Should the CD student's career interests jell further toward sub-baccalaureate occupational education - and providing he or she can demonstrate both the need for more specific instruction, as well as the capability to profit from same - he or she can spin off from the CD program into the regional SOE center, as an advanced student

It is important to note, however, that students in CD programs of the satellite high schools will remain fully enrolled in such home schools and will remain under the general instructional supervision of their home-school faculties and principals.

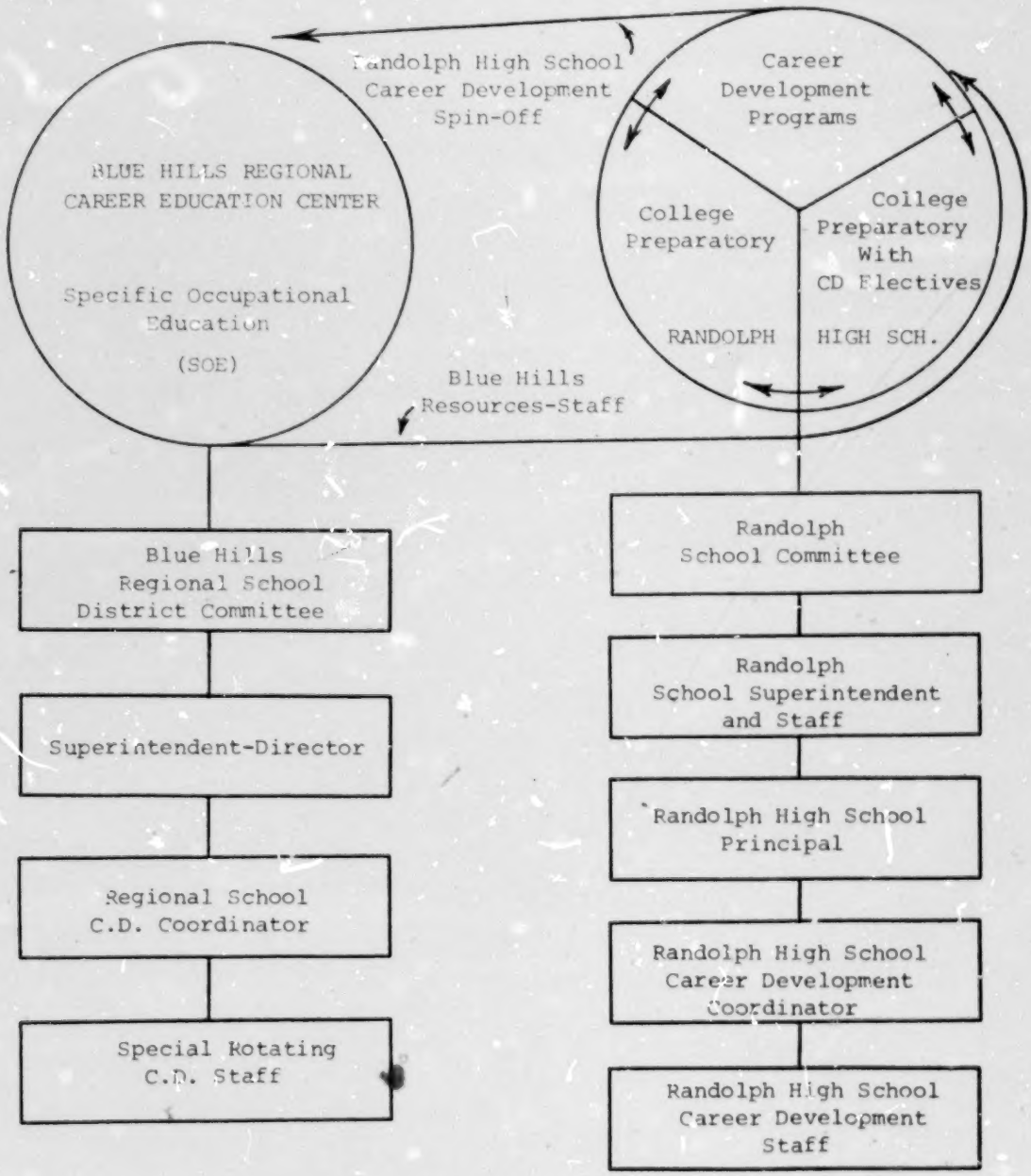
Several operational elements of the MAVA-Blue Hills network model require additional explanation, since the foregoing general discussion has left unanswered, questions as to specific administrative arrangements, faculty relationships, occupational guidance devices and program content.

Highlights (using Randolph High School as the satellite-school example, where necessary) are as follows:

Administrative arrangements - Previously, the statement was made that the respective roles and functions for the regional SOE center and the satellite high school have been very carefully delineated. The details of this delineation are schematized in Diagram #5, below:

DIAGRAM #5

ORGANIZATION OF ADMINISTRATION AND STAFF



The administrative arrangements which are schematized or implied in Diagram #5 are the following:

- The regional SOE center will employ and directly supervise the Regional Career Development Coordinator and the Special Rotating Instructional Staff for career development programs throughout the region

- The Regional Career Development Coordinator will have developmental responsibility for the occupational segments of all CD programs in the satellite schools within the region, under the authority of the Superintendent-Director of the regional SOE center

- Each satellite school participating in the career development program of the region will employ and directly supervise (i.e under the immediate authority of the satellite school Principal) a Local Career Development Coordinator, who will be responsible - along with the local school's career development faculty - for the immediate instruction of such students; and for the students themselves, including the latters' activities in occupational segments of the CD program

- Each local CD instructional team will be composed of teachers presently on the faculty of the local school (e.g. Industrial Arts, Homemaking, Business-Office Education); and, this team will be under the usual supervision of the local school administration, as well as having full responsibility for the students in that school's career development program

- The local or satellite school will defer to the Regional Career Development Coordinator in the <u>design</u> of the CD program, but, while using him and the regional SOE center-based Special Rotating Instructional Staff as "outside lecturers", the local school Principal will be responsible for the implementation of his own CD program

- The Regional SOE Center's Superintendent-Director will be responsible for maintaining the quality of all career development programs in satellite schools within his region. In practice, this means that (a) after consultation with the local Superintendents involved, he will supervise the design of coordinated CD programs, within and among the satellite schools in his region; (b) he will prepare regionwide proposals for submission to the State Division of Occupational Education, for P.L. 90-576 or other funds; (c) he will have the responsibility and the right to monitor and evaluate all such programs within his region, for the purpose of recommending them for future funding; and (d) he will have the responsibility for compiling and submitting all official reports on occupational segments of the CD program which are supported by Federal and/or State vocational education monies

<u>Faculty relationships</u> - As described above, an important key to the career development program's organization is the stipulation that the regional SOE

center (i.e. Blue Hills) employs extra instructors in basic fields such as Electronics and Allied Health, each of whom has received specialized training for his or her role in the CD program; and who will work with the local school's Industrial Arts, Homemaking, Business-Office Education - and academic subject - teachers, both in developing the instructional material and in presenting the actual instruction. As mentioned, these regional SOE center-based instructors rotate from school to school, on a schedule which is cooperatively designed with the local or satellite school faculties, in order to present selected units for which their advanced technical preparation is required. Regular joint meetings of the regional instructional staff and the local staffs are held. The professional improvement needs of both types of staff are considered in detail when the Summer Workshops, sponsored by the Massachusetts Association of Vocational Administrators, are being developed.

Occupational guidance devices - Both Blue Hills and its currently cooperating district high schools (Randolph and Holbrook) are operating on the premise that regular occupational guidance - beginning in elementary and junior high schools which feed the secondary system, and continuing on a regular and intensive basis throughout high school - is perhaps the key ingredient in making the new career education program work.

Guidance counselors from Blue Hills and cooperating schools (including many at the lower levels) meet regularly and are developing coordinated Career Decision Centers for all of the schools. Industry involvement is being increasingly sought; and, various modern methods of evaluation - particularly on aptitudes and basic skills - are being thoroughly investigated.

An interesting recent innovation was the initial presentation of the "South Shore Career Conferences" which were offered at Blue Hills on four successive Mondays, during March 1972. The purpose of these conferences was to bring Industry's representatives into face-to-face contact with all high school students in the Blue Hills district (and beyond) and with the parents or guardians of these students. Major occupational clusters covered were: Health Careers; Careers in Social Service; Careers in Business; Service Industries; Transportation; Construction; Fine and Communicative Arts; and, Science and Technical Engineering - each of which clusters included from seven to twelve specific occupations. Two different clusters were offered in each Monday night session and, through careful scheduling, students were able to investigate three

or more specific occupations during each evening.

This program - which was designed, organized and coordinated by the guidance counselors at Blue Hills, their counterparts in the seven high schools in the Blue Hills district, and those of three additional neighboring towns - on a fully cooperative basis - proved to be a spectacular success, with crowds of three-to-four thousand jamming the facilities, each night. Many inquiries have since been received from all parts of Massachusetts, as well as other parts of the United States.

Consequently, in the occupational guidance area as well, the MAVA-Blue Hills network model has proved itself capable of outstanding performance in the career education effort.

Program content - The various administrative, staffing and guidance arrangements which have already been discussed are, of course, supportive to the primary purpose of the network model: the occupational preparation of its students. Therefore, program offerings at both the SOE (Blue Hills) and CD (Randolph High School) locations are summarized below:

Specific Occupational Education
At the Blue Hills Regional Technical School

(School Year 1971-72)

Secondary

- Auto Body
- Auto Repair
- Electricity
- Electronics
- Graphic Arts
- Health Services
- Machine Drafting
- Machine Shop
- Metal Fabrication
- Structural and Machine Woodworking

Post Secondary

("Type A" = certificate or associate degree; "Type B" = condensed secondary-type offerings for academic high school graduates, school leavers, and other adults; both are day programs)

Type "A"

- Dental Assistant (certificate)
- Medical Lab Assistant (certificate)
- Advertising Art & Design (degree)
- Civil Structural Engineering Technology (degree)
- Data Processing and Computer Programming (degree)
- Electronic Technology (degree)
- Electro-Mechanical Technology (degree)

Type "B"

- Auto Repair
- Auto Body
- Electricity
- Graphic Arts
- Machine Drafting
- Machine Shop
- Metal Fabrication
- Structural Woodworking

Evening Adult and Continuing Education

Auto Body
Auto Repair
Electricity
Electronics
Graphic Arts
Machine Drafting
Machine Shop
Metal Fabrication
Structural Woodworking
Data Processing
Advertising Art & Design

It should be noted that the current Blue Hills Regional Technical School program also includes (a) adaptations of many of the above offerings for the hearing-impaired, educable retarded, physically handicapped, and academically deprived students; and (b) two types of professional development courses for teachers and administrators. In addition, it should be noted that - when the currently proposed expansion plans are implemented - Blue Hills will begin to offer new secondary-level programs such as Closed Circuit Broadcasting, Culinary Arts and Medical Secretary, among others; new post secondary-level programs such as Licensed Practical Nurse, Rehabilitation Aide, Medical Laboratory Technician, Registered Nurse, Heating-Ventilating-Air Conditioning Technology, and Diesel Technology, among others; and, will reflect these new offerings in expanded evening programs for adults.

Career Development
At Randolph High School

(School Year 1971-72)

Starting in September 1971, entering twelfth grade students have had the option of selecting a career development major from among the following occupational clusters:

Architectural Design Careers
Graphic Arts Careers
Health Careers
Electrical/Electronic Careers
Automotive Careers
Structural Careers

Should a student opt for a career development major, his overall program would be as follows, within a twenty-eight period-per-week schedule:

Career Major (10 periods)	Career Related Minors (3 periods required)	Academic Majors (15 periods req.)
Architectural & Structural Drafting	Art	Math, Science, English, and Social Studies
Graphic Arts	Art or Typing	M, S, E & S.S.
Health Services	Nutrition	M, Biology, E & S.S.
Electro-Lab	Career Drafting	M, S, E & S.S.
Power Mechanics	Career Drafting	M, S, E & S.S.
Structural Lab	Career Drafting	M, S, E & S.S.

All Career Major Students are required to take two periods of physical education, weekly; also, all Career Major Students are allowed to take other electives as detailed in the Randolph High School elective outline.

The Randolph High School program handbook (distributed to all students entering the high school, and to their parents) states the following, regarding the career development program's flexibility:

- While it is necessary for each 9th Grade Randolph student to select a career major at this time, it must be clear that such students will also have an opportunity, during the first four months of Grade 10, to explore many of the career programs available, while maintaining a common academic core each day

- In order to avoid "locking" a student into a single Career Lab, such exploratory experiences in many labs should enable the Career Development student to select a specific formal major by January of his or her 10th Grade program

- Lateral options will be available after such formal program date and will permit students who have become disenchanted with their original program to make course changes which best suit their modified individual interests and aptitudes, after career counseling and guidance

- Each career lab, in itself, will have a three-year sequential laboratory curriculum designed to permit Randolph High School students to ascend the career ladder while maintaining a continuum of relevant academic education

- During Grades 10, 11 and 12, students having an intense interest in extending their career majors will be allowed to "spin-off" to the Blue Hills Regional Technical School, should seats be available at that time

Regarding those students who do not elect to "spin-off" to Blue Hills, the handbook goes on to say that, "the successful graduate of a career program at Randolph High School will have many options upon graduation from Randolph High School:"

- If a Career Development student has completed the required comprehensive program, he or she will be prepared for a four-year college program. (Individual achievement will be the sole indicator of success in this option; however, the required academic units will provide for this option.)

- The Career Development student will immediately be able to enter the "World of Work" with entry-level skills in the area of career education upon graduation

- The Career Development student will be able to apply to the Blue Hills Technical Institute after high school, for more specific preparation, in a one-year or two-year certificate program, or for a two-year Associate Degree program in Applied Science in one of the varieties of technologies which will be available at the Institute

The Blue Hills Career Education Network in Operation: Present and Future

The designers of the Blue Hills career education network are aware that their model's basic premise (i.e. the equal, four-way "split" at the secondary level) is open to question. For example, the argument might be made that - since the research cited earlier claimed higher returns for investment in vocational programs - the twenty-five percent allocation to Specific Occupational Education is too modest a target. Briefly, the answer to this argument is that the research results can be applied to excess: obviously, a point of diminishing returns will be reached in any investment. If a region needs 40 automotive mechanics during a five-year period, the training of 80 will have long passed this point - both in financial and human terms. There are limits to the need for skilled workers; and, the model attempts to be realistic in this respect.

A second question which might still be raised (notwithstanding countering arguments which have already been offered) is whether a comprehensive high school might not be able to handle the total vocational-technical program by itself - without joining with other school districts to invest additional funds for a regional vocational-technical school. The seemingly modest goals implied by the 25-25-25-25 percent secondary split might encourage this view.

Consequently, the following calculations - concerning the actual and projected operations of the Blue Hills career education network, using Randolph High School as the example - are offered as an aid in deciding whether the comprehensive high school could "do it alone"; and, whether the educational targets are, in fact, as modest as they appear at first glance.

The Current Situation

Blue Hills Regional Center

The Blue Hills region is comprised of seven towns, several of which have large populations. The secondary school population for the region is approximately 10,000. Therefore, according to the premise of the MAVA-Blue Hills

model, 2500 of these students should be receiving specific occupational education. However, the current secondary enrollment at Blue Hills is in the neighborhood of 600 students. Through its own facilities (which are operating beyond their intended capacity) it is therefore serving about 6% of the secondary population, rather than the targeted 25%.

Randolph High School

The town of Randolph has just completed a major expansion of its existing high school, at the cost of nearly $9 million. This expanded facility has excellent shops and laboratories - well above the State average. In October of 1973, the town had enrolled 165 secondary students in specific on-campus occupational programs at Blue Hills. These, however, have already been counted in the Blue Hills percentages just quoted. In addition, Randolph High School's career development programs (now operating in cooperation with Blue Hills) service approximately 425 students in exploratory clusters. According to the Career Development or CD targets of the Blue Hills model, Randolph is serving about one-third of the projected number of students in this particular program. The CPCDE (College Preparatory with Career Development Electives) option, which was designed to serve an additional 500-600 students, is now in an experimental stage.

Projected Plans

Blue Hills Regional Center

By 1976, Blue Hills will have responded to the current situation by completing a $12 million expansion program with ground having been broken in spring of 1974. This will include a significant enlargement of the present building complex, which will then be devoted entirely to secondary-level programs; a 500 pupil technical institute with full Associate Degree granting powers; and a number of new common facilities such as a much larger cafeteria. By enlarging its secondary program space (some of which is now housing the post secondary programs) and by staggering the school day into shifts, Blue Hills should be able to accommodate approximately 2000 secondary students on campus in specific occupational programs - a major increase in effort and in service.

However, in the meantime, the secondary population of the district will have risen to about 11,000 students. Therefore, the specific occupational education (SOE) target will have increased to 2,750 students. Blue Hills will,

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then, be serving 70% of this targeted SOE number - an adequate percentage for a regional vocational technical school to serve.

Randolph High School

According to current projections, Randolph's share of the expected secondary enrollment in the Blue Hills district will be approximately 2,500 students. According to the Blue Hills model, this means that its SOE, CD, CPCDE and CP programs can expect to serve 625 students, each.

First - in the specific occupational education sector - Randolph's quota in the expanded Blue Hills regional center is projected at an estimated 400 students. Therefore, the high school will have to offer other programs of the occupational competency variety to 225 of its students, using its own facilities. Undoubtedly, much of this will involve cooperative arrangements with local Industry - thus fully utilizing this training option.

Second - in the career development sector - Randolph must serve an additional 625 students, using its own five "career labs" plus the resources of the Blue Hills regional center. Although this is a tripling of the 1971-72 enrollment in this program, the target seems within reach; 500 students have already applied, for the 1973-74 school year. However, the shops will be utilized nearly to capacity, when the projected 625 students are being served, in 1974-75. This will be the case, since it must be remembered that Randolph High School must also - using these same high school facilities - offer limited career development electives (CPCDE sector) to still another 625 students, according to the Blue Hills model projections.

Conclusions

Clearly, the seemingly modest targets of the Blue Hills model are far more rigorous than a layman might think. Given roughly a $12 million investment in secondary occupational education at the Blue Hills regional center, a $9 million comprehensive high school in Randolph, and extensive use of Industry's help in offering cooperative programs - this tandem of institutions will have to extend themselves to meet the proposed targets. The calculations throw severe doubt on easy statements concerning vocational education for 40 - 75% of all secondary students; and, on statements concerning the employment of the comprehensive high school option, alone. Obviously, if a school of Randolph's calibre (and investment) could not offer the total occupational program

which it needs, by itself, what chance would a less well-endowed high school (meaning the great majority of Massachusetts secondary institutions) have to perform these difficult tasks ?

The foregoing example will also serve notice to those who feel that Massachusetts can neglect (or worse, deplete) the resources for specific occupational education (i.e. vocational-technical education) and focus exclusively on the broader program of Career Development - which, unfortunately, is what many who are new to the field mean by "career education".

Both types of expansion will be urgently needed - simultaneously and in concert - if the Commonwealth is to make any appreciable dent in the problem.

A Summary of the Benefits of the Expanded Regional Vocational-Technical School As the Center of a Career Education Network

Career Development

In the expanded form described in the above model, the Blue Hills Regional Technical School offers benefits to member communities which participate in the career education network, by

- providing a means for merging the college preparatory and occupational education programs into a single, dual-purpose approach which is urgently needed by an estimated fifty percent of the secondary school population
- offering jointly funded, central resources and staff for this program which are beyond those which any single community could assemble for its own program
- using its own facilities to provide backup support to the communities career development programs (e.g. Blue Hills constructed most of the specialized furniture for the Randolph High School "career labs", enabling them to be fully furnished and equipped for only $80,000 - considerably less than would otherwise have been the case)
- extending, generally, the many benefits to students (listed earlier in this document) which are proved to result from participation in well-organized, effective occupational programs - and this extension can only result in similarly numerous benefits to the communities in which these students live and work

Specific Occupational Education

In addition to the above extended benefits, in the area of career development, the Blue Hills Regional Technical School and Technical Institute continues to offer benefits through its own specialized programs - to all member communities and enrolled students - of all the kinds previously listed.

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Of special relevance to the idea of integrated and comprehensive K - 14 career education, the Blue Hills regional center provides benefits which have either a multiplication effect or a "fleshing-out" effect on the entire network - by

- providing quality programs in a wide variety of high-skill occupations which offer multiple entry points to district students who can benefit from such instruction (i.e. entry at the beginning of the Ninth Grade, or during Grades 9 - 12 as a "spin-off" from the career development programs in district high schools, or subsequent to graduation from these high schools)

- offering certificate and associate degree types of post secondary technical education, thus offering a top-level option (smoothly integrated with lower-level programs in the district) to students who might otherwise be dead-ended when they finished high school

- utilizing its modern shop facilities and its faculty expertise as a core ingredient for effective career awareness and career exploration programs - beginning in the early elementary grades - which it is actively helping district elementary and junior high schools to design and implement

- providing a broad program of adult and continuing education, within which all citizens of the district can pursue whatever specific occupational goals they select - at any time during their lifelong process of career choice and education

Concluding Statement

It is a well-recognized fact that Massachusetts is still a commonwealth of individual communities which jealously and rightfully guard their right to develop their own solutions to their own possibly unique needs. Therefore, the MAVA-Blue Hills model for a career education network is not herein proposed as a statewide "straight-jacket" into which all must fit themselves. Special adjustments will have to be made, at the discretion of local educational leaders.

However, this presentation has attempted to develop the common goals for which any career education effort must strive, to describe the logical boundaries within which any such effort might profitably locate itself, and to correct several misimpressions which might well lead such efforts astray. The Blue Hills model - while not the only one possible - is the only one which is currently functioning as an integrated, fully cooperative system. Readers can be assured that - whatever features they may disagree with - it works. Perhaps, not the least of its benefits, as experienced in the Blue Hills district, is

that it has provided a practical framework for real cooperation between academic and vocational-technical educators. Too often, changes are designed - through a sense of urgency or frustration - to be "revolutionary", where they should be "evolutionary". While there are many arguments against selecting any single "alternative" for offering occupational education to the exclusion of the rest (and these arguments have already been stated), probably the best argument is that such a radical approach violates the legitimate spheres of responsibility - and competence - which all types of educators have developed, over the years. The Blue Hills model, for example, strongly affirms the fact that academic educators have every right to become involved in career education. In fact, they would be ignoring important mandates, if they did not. However, the model also presumes that the vocational-technical educator has the expertise and the experience to take some of the operational burden from these administrators, when they become involved in unfamiliar occupational programs.

On the other side of the coin, the proposed model carefully states that, in career development programs, academic course-content and supervision of the students themselves remain the sole prerogative of the academic school administrator. He or she loses nothing that was present before; but gains help in a difficult new endeavor which - along with the many other difficult problems which a modern-day school administrator must face - might prove overwhelming.

Finally, the Blue Hills network model - together with program costs research now underway - may well provide the basis for a new funding design for occupational education in Massachusetts - a design which would reimburse all such programs according to their legitimate costs and make such incentive aid available to communities according to their need. The first step - that of correcting misinformation regarding the costs of vocational-technical education - has hopefully been accomplished by this document.

Next steps must certainly gather inputs from all branches of education and the cooperation of all educators is urgently required.

Volumes of Related Interest

I - The Satellite Plan

Sample Curricula for a Cluster of Career Development Options

II - Health Services
III - Electro Lab
IV - Architectural Design
V - Graphic Arts
VI - Automotive
VII - Construction
VIII - Business

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